

DOCKET NO: 246219US6

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
MINEHIRO TONOSAKI, ET AL. : EXAMINER: LEO, LEONARD R.  
SERIAL NO: 10/728,916 :  
FILED: DECEMBER 8, 2003 : GROUP ART UNIT: 3744  
FOR: HEAT-TRANSPORT DEVICE, :  
METHOD FOR MANUFACTURING THE  
SAME, AND ELECTRONIC DEVICE

REPLY BRIEF

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Examiner's Answer of August 21, 2008, Appellants submit the following Reply Brief.

III. STATUS OF THE CLAIMS

Claims 11-12, 14-18, 20-22, 25-32, 34, 36-54 are pending in the application. Claims 1-10, 13, 19, 23-24, 33 and 35 are canceled claims. Claims 17-18, 20-22, 26, 28, 30, 34, 37, 39, 41-43, 45-47, 50, 52 and 54 are currently withdrawn from prosecution. The rejection of Claims 11-12, 14-16, 25, 27, 29, 31-32, 36, 38, 40, 44, 48-49, 51 and 53 is appealed.

## VI. GROUND'S OF REJECTION

A-B. Claims 11-12, 14-16, 25, 27, 29, 31-32, 36, 38, 40, 44, 48-49, 51 and 53 are rejected as obvious under the meaning 37 U.S.C. §103(a) over Kirshberg (U.S. 2003/0066625) in combination with Steele (U.S. 5,562,949) or Uchida (U.S. 5,943,543) (see pages 3-5 of the Office Action of February 5, 2008)

The Office asserts that the combination of Kirshberg with Steele or Uchida renders the claimed invention obvious. The Office acknowledges that the primary reference, Kirshberg, does not disclose all of the features of the present claims (e.g., a silicon dioxide coating – see page 3 of the February 5, 2008 Office Action). The Office relies on Steele or Uchida as evidence that one of ordinary skill in the art would use the hydrophilic coating disclosed in Steele or Uchida (e.g., silicon dioxide) in the device of Kirshberg to arrive at the presently claimed invention.

C. Claims 11-12, 14-16, 25, 27, 29, 31-32, 36, 38, 40, 44, 48-49, 51 and 53 are rejected for failing to comply with the written description requirement under the meaning 35 U.S.C. §112, first paragraph (see pages 2 and 3 of the February 5, 2008 Office Action)

The Office asserts that the recitation in present independent Claim 1 of “a first glass and a first substrate” and “a second glass and a second substrate” is not adequately described in the original specification.

## VII. ARGUMENT

### Appellants' Response to Section (9) of the Examiner's Answer:

The Examiner's Answer of August 21, 2008 repeats the assertion that there is not adequate written description of the invention of the present claims. The Examiner now characterizes the rejection for lack of written description under 35 U.S.C. 112, first paragraph as follows:

There is no basis for “a first glass and a first substrate” and “a second glass and a second substrate” in claim 1. The specification discloses only a single glass substrate.

There is no basis for the "first and second substrates are at least one of a glass substrate and a silicon substrate" in claim 1. The specification discloses the device is composed of only a glass and silicon substrate, not two glass substrates.

See page 3 of the Examiner's Answer of August 21, 2008.

The Examiner errs in stating that the specification does not disclose a device having two glass substrates. The present specification explicitly describes embodiments having "a plurality of substrates bonded together" (see page 7, lines 19-22 of the specification).

The original specification describes a micro heat-transport device having a plurality of glass substrates and therefore inherently and/or implicitly describes a micro heat-transport device having a "first" glass substrate and a "second" glass substrate.

Appellants request the Board overturn the rejection under 35 U.S.C. § 112.

Appellants' Response to Section (10) of the Examiner's Answer:

In section (10) on pages 6-10 of the Examiner's Answer, the Examiner responds to Appellants' arguments set forth in the Appeal Brief filed in the present application on June 5, 2008. The Examiner takes Official Notice of several facts without citing to the record and without providing any evidence in support.

For example, on page 7, lines 6-7 the Examiner states that it is well known in the art of capillary pumped loops (CPLs) that a wick structure provides fluid pumping or fluid transport function. The Examiner provided no support for this assertion. To the extent the Examiner relies on this assertion in support of the rejection, Appellants submit the rejection is improper and should be overturned.

Further, the Examiner appears to argue that Kirshberg and Uchida are not different (see page 7, line 3 of the Examiner's Answer) then appears to implicitly acknowledge that Uchida is in fact different from Kirshberg for failing to disclose the use of a silicon dioxide

coating on a nonmetal heat transfer surface (see page 7, lines 11-12 of the Examiner's Answer).

Appellants submit that the Examiner's characterization of Uchida is not correct and that, in fact, Uchida nowhere discloses the application of a silicon dioxide coating on any type of surface other than a metal heat transfer surface. The heat transmitting pipe and the heat transmitting plate of Uchida are made of materials that are subjected to a special coating process. The coating process of Uchida coats copper onto the heat transfer surface of the heat transmitting pipe and heat transmitting plate (see the Abstract of Uchida). For example, Uchida discloses the following (underlining added):

The present invention is intended to solve the problems as stated above. It has for its object to provide a heat transmitting member in which the body thereof such as metal plate or a metal pipe of high thermal conduction is overlaid with a porous metal material having a large surface area and a high percentage of voids per unit volume, and a continuous and complete method of manufacturing the heat transmitting member.

See column 1, lines 60-67 of Uchida.

The material of the Uchida heat transmitting member is overlaid with a porous metal. Thus, at best, Uchida discloses that a silicon dioxide coating is applied to a metal surface, not to generic surfaces or non-metal surfaces. Contrary to the Examiner's assertion, Uchida does not disclose or suggest that a silicon dioxide coating may be applied to any type of surface other than a metal surface.

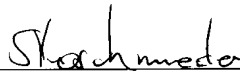
The Examiner's implicit assertion that Uchida discloses applying silicon dioxide as a hydrophilic coating agent to other materials is not correct. The Examiner's assertion that Uchida shows that one of ordinary skill in the art would be motivated to cover a glass substrate or a silicon substrate with silicon dioxide to improve wettability and wicking is therefore further not correct. Appellants submit that such an assertion is not supported by the

art relied on by the Office at least because the art relied on by the Examiner discloses that such a silicon dioxide coating must be present on a metal surface.

As argued in the Appeal Brief of June 5, 2008, Appellants submit that the rejections are not sustainable and should be overturned.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



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